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Timing DDT Sprays in the Spring for European Pine Shoot Moth Control

Life history studies of the European pine shoot moth by Miller and Neiswander^{1/} have shown that in the spring the insect moves out of infested buds and seeks new buds to feed in. A DDT spray applied during this spring movement gave control as good as was obtained with a similar spray applied in the summer when the newly hatched larvae were exposed. Since these first tests were made, other investigators have tried spring treatment with similar success. This Technical Note discusses briefly the results of some studies which were designed to show the full extent of time available for spring spraying.

Timing tests with DDT sprays were carried out in Lower Michigan in the spring of 1957 over a 6-week period and repeated in 1958 over a 9-week period. Several concentrations of DDT were applied by means of back-pack sprayers to infested red pine trees 3 to 6 feet tall. Treatments were applied at 12-day intervals. The foliage of the trees was well moistened. In 1957, plots consisted of 50 trees each and were located in Ottawa and Wexford Counties; in 1958, they consisted of roughly 25 trees each and were located in Ottawa and Ingham Counties. Treatments were evaluated by counting infested and non-infested tips on about 25 sample trees during June when the surviving insects were pupating.

The tests showed that the number of infested tips on red pine were reduced 90 percent or more by sprays containing 2 pounds of actual DDT per 100 gallons of water applied during a 4-week optimum period in the spring. This period included the 2 weeks before and the 2 weeks after the beginning of external larval activity. In Lower Michigan, it coincided with the month of April; it can, of course, shift slightly with abnormal weather which might speed up or slow down the resumption of larval activity. Doubling the concentration of DDT extended the effectiveness of the spray about a week.

For practical control operations, the surest method of properly timing spring sprays is to apply them at the first sign of new larval feeding. New feeding appears as glistening resin exudates around the buds. If no observations are made on larval feeding activity, trees can be sprayed about April 15 in the latitude of Lower Michigan with reasonable assurance of success.

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^{1/} Miller, W. E. and R. B. Neiswander, 1955. The biology and control of the European pine shoot moth. Ohio Agric. Exper. Sta. Res. Bull. 760: 1-31.

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